1: Lorimer T-3 (1920-4; 1934-5) 1938 AV7 Burusho AV7

[643] ruled his country in the humanest and wisest of benevolent autocracies,
181 since the treaty of 1892 placed him on the throne of his murdered father
609 and parricide brother—to our humbler neighbours in Aliabad, the
village four miles below the capital which we made our headquarters
for fifteen months. As soon as the people grasped the purpose of our
[212] coming (which was not easy to explain to an illiterate people) they were
overjoyed that a ' Sahib ' should trouble to learn their vernacular—
a thing which no white man or woman had done before—and take an
interest in their customs and hereditary lore. At first they would
hesitate : ' but you have wheels (=machines) in England, and can do
all these things better than we can '. Within a few days they were
vying with each other in explaining, demonstrating and bringing
ploughs, looms, winnowing forks, bows, stone cooking pots to the
resthouse where we were installed, that D.L. might measure them and
take ' studio portraits ' of them, ' for you mustn't put anything in the
book about us that isn't exactly true '.

132 The entire life of the Hunzukuts is centred in water. The rain-
● 312 fall in the oasis level (7–9,000 feet), is negligible—we reckoned less
than 2 inches per annum ; in default of any means of raising the
361 water, the river, flowing between its crumbly earthen cliffs, 500 or 1,000
feet below their fields is useless for irrigation ; there are no springs or
wells ; hence all water for all purposes must be trapped high up at the
snout of some side glacier and conveyed on galleried aqueducts across
yawning gorges and the faces of sheer cliffs. The main water channel,
the Dala, which supplies all the more recent villages of Hunza, ' the
new settlements ' as they are called in contradistinction to the three
original villages—Baltit the capital, Altit and Ganesh—travels some
8 or 10 miles in its circuitous route from the Herber glacier in the
gorge behind Baltit, cradled between snow-peaks of 23,000 feet, before
it peters out in a semicircular sweep round Aliabad.

312 The Dala was dug some three or four generations ago (90–100
412 years) with wooden shovels and wooden picks tipped with ibex horn,
and represents an amazing feat of engineering skill for people without
816 any instruments of precision. The sluices that control the distribu-
tion of water—every teaspoonful of which is rigorously allotted—are
of the simplest ; most often a slab of flattish stone plastered in with
mud, sometimes a wooden shutter sliding in a rude wooden frame,
sometimes when the water is being taken off to a lower level a circular
hole in a stone slab, closed at need with a mushroom-shaped stopper,
rough hewn from a solid tree trunk.

THE LAST LAP

From here we saw the fine granite piers of the old Tishót Bridge, the one we always used to cross by. It had stood for thirty years, and then was wrecked one day by a hurricane; wind can be fierce and powerful in these gorges. But the fact that it *had* stood thirty years proved that the chosen site was a good one. There was firm rock (not the crumbly kind of everlasting hill) on both sides at a considerable height above the river, well out of reach of summer floods. The obvious thing would have been to replace the bridge and use again the unharmed granite piers; but some engineer decided otherwise, and we had to stay on the Nagir side and ride on to the new bridge. The cliffs on each side here rise anything from 2,000 to 3,000 feet, and the road round them is a little ledge a few feet wide, some 800 feet above the river-bed. When it is a ledge of firm rock all is well, but, as I have already said, the mountain sides are mainly crumbly masses of stones, boulders, and sand, and there often seems no good reason why the road should not just slide down to join the other debris (and so often it does, especially after rain). Sometimes even where there is a firm rock ledge it isn't wide enough for a laden pony. Then if the inhabitants can find a couple of firm rock spikes below they throw a tree trunk across and build up a loose wall of unmortared stones on that till they get it to road level. If there are no natural spikes, they bore holes in the rock, and drive in a few pegs to take their tree trunks.

This is the method they have to use to revet the faces of their fields and the sides of their aqueducts, which are often carried eight or twelve miles round the face of the most impossible-looking precipices, so they are experts in the art. Accidents happen often enough to the road-makers, but are almost unheard-of amongst road-users. The look of the road might make your hair stand on end, but it is far safer than our murderous motor roads at home.

At last we got off this gallery business and out on to another fan, and we saw the new bridge on our left, quite fairly near, but the cliffs were steep and high and crumbly and there was no direct way of reaching it, so we had to overshoot it by a mile or two before the road turned down. And such a road!

2: Lorimer T-3 (1920-4; 1934-5) 1939 AV7 Burusho AV7

Chapter 13

HOUSEKEEPING PROBLEMS

BEFORE we could really settle down to the business of life there were several practical problems to clear up. Water was naturally the first item. The jolly little stream just in front of our rest-house did not run by any means all the time. It brings water from the great glacier behind Báltít; the actual aqueduct channel is some twelve miles long, and represents an amazing feat of engineering. It was made about three generations ago—before which the "New Settlements" of Aliábád and her outliers did not exist—when iron was still practically unknown in Hunza. The excavations and the galleries on which it is piloted so skilfully over gorges and along impossible cliff faces were all made with wooden shovels and picks tipped with ibex horn. The people had—and have—no instruments of precision, no theodolites, nor levels. Against this they have some hereditary instinct that we lack, and an inherited or traditional common sense that enables them to adjust the necessary downward gradients exactly right. You never hear of anyone making a false shot in laying out a water channel, and you never hear of any "labour" difficulties. When a new work is undertaken for the public good it is supervised by the Mir, or his Wazir acting for him, and it is carried out by communal labour, of which everyone recognizes the justice and necessity. The Dála, which will frequently recur in my story, is the main aqueduct that supplies Aliábád, but it has to feed other villages *en route*, and our stream, which was its last section, was therefore only in action at certain times. These are, however, known to everyone, and our people drew water enough when they could get it to carry on for the day or half-day when it would be cut off.

HOUSEKEEPING PROBLEMS

312 271 It[1] was beautiful, soft, pure water which gave delightful baths, but heavily silt-laden and supposed not to be fit to drink. We were luckily able to get half a dozen big petrol drums from Gilgit (left behind empty by the R.A.F.), and we stored it in these and let the silt settle. This water served us for washing and for photography.

312 About two miles away there was a spring of clear but hard water that issues from the foot of a cliff down near river level. This was recommended for drinking. So we took on a special man, Sagi by name, as water-carrier and general washer-up, to help in pantry and kitchen. He was a nephew of our old friend Nazar and a good fellow, though for some reason a little less cheery in appearance than our other men. Twice a day he would walk the two miles, climb down and up the 500 or more feet, and bring water for our tea, etc., and for making up the photographic solutions. We paid him the princely sum of about a pound a month, and he was delighted, while his brothers divided amongst them the extra work at home.

Considering the labour involved, it made us feel rather pigs to drink tea half a dozen times a day and expect a daily bath. When two of us were photographing hard and perpetually wanting to wash negatives and prints in eight or ten changes of water, my heart rather bled for Sagi. One day that had been particularly severe I said as he appeared with more and more water buckets at the door of the dark-room: "Poor man, I'm afraid our photographs give you a lot of extra work and trouble." His usually quiet face lit up with a peculiarly charming smile: "Nay, Mother dear, it is a pleasure, not a trouble. The work and trouble are yours."

262 235 [624] The next thing in importance was food, and we found that we could, without apparent hardship to the people, buy a daily hen. There are a couple of officials whose job it is to see about supplies for travellers, and they arranged to get the fowls now from one village and now from another, so that our demands might not press too heavily on anyone. The Hunza hen is an athletic bird. You may see her fly like a lumbering, over-weighted pigeon 15 or 20 feet across a gully, and so we were not surprised to find her wing muscles well-developed.

[1] [The water in the Dâ'la, the aqueduct--Analyst]

624 would pay them a small retaining fee if they would take it in
124 turns to be "on duty" with him in their spare time. They would obviously be useful informants.

487 We had to walk along in single file. There is no "road" in
312 Hunza where two people can walk abreast, or along which you can ride, except the "Great North Road" running through from Kashmir to Kashgar, and even it is never more than 4 to 6 feet wide. The other tracks run mostly beside small water-channels to enable people to get from one sluice to another to juggle the water now off, now on. Even when you have a neat little track fairly horizontal (there are only three of these possible for ordinary walking) it is broken every few yards by a sluice which you must jump or step over carefully so as not to interfere with the water arrangements or, alternatively, break your leg. The sluices are the simplest things imaginable—just a gap in the side wall of the channel which can be closed with a couple of convenient, slab-like stones and plastered up with mud from the watercourse. Occasionally there is a little wooden shutter which can be raised or lowered in wooden slots at the side.

As we went along David asked the names of the various kinds of water-channels, fields, etc., that we saw (the *names* he already knew, but not at first hand which kind was which), and presently we had a train of bright-eyed boys in the fields on each side, full of amusement at this new game. One would cry: "This stone is a flint; this is a stink-stone," whereupon he would crack it and give it to us to notice the faint smell of sulphur it gave out. Another would run up: "Here's a poppy and a poppy-head"—so we were not going to lack for willing teachers.

After a little we turned down a narrow "lane," less like an English lane than anything else on earth. It plunged downhill pretty steeply, sometimes just a rocky slope, sometimes just one boulder below another making a very crude flight of steps varying from 18 inches to 3 feet or so. Beside the "path" ran the inevitable water-gutter in which you could walk, as it happened at the moment to be dry.

417 On each side, a bare 3 feet apart, were the usual walls of
333

2: Lorimer T-3 (1920-4; 1934-5) 1939 AV7 Burusho AV7

000 long, for fear we were in any way spoiling the fun. We took another route home, where a tiny 2-foot track at the base of a high wall led us past a fine reservoir of water and out on to the main road.

• 312 The whole countryside is dotted with these deep open-air reservoirs, their sides built of stone walls. They are drained from a hole at one side of the floor, and this can be plugged by a skilfully shaped wooden stopper mounted on a long slim poplar pole. It may happen that your turn for water comes at a moment when you don't immediately want to use it. In that case you store it till wanted and draw it off as required. When one of these *pferis* is full in summer time the men and boys use them as swimming pools. In winter everyone fills his *pferi* before the water ceases to flow, and this gives him a reserve of water for his animals and for washing purposes. The drinking water is carefully stored in smaller similar dugout pits which are scrupulously roofed over almost at ground level and approached down several rude steep steps, so that there is no fear of their being polluted by the animals. The Hunzukuts are most fastidious in their habits, and do not allow any of their water to be fouled.

000 Next evening David and I went out for another walk alone. We had no intention of being dogged by our retainers, however helpful, for we knew we could not hope to get into touch with the people themselves if any third parties were present. We pursued the Dála as before but without turning downhill. In the very first empty field (just reaped) there was a nice little girl about eight, whose name she told us was Kaníza—she will turn up again frequently, for she lives in one of the very nearest houses. She was carrying a small youngster on her back and wasn't in the very least shy. The small child was a girl and was her married sister's and had come over from Báltít to spend the day. The baby was two and would walk and talk, she said, and her house was just along there in front and she was going home. She came along behind us chattering away. These single-file paths are unsociable, and the fact that no one can ever walk beside you does not make it easier to talk Burushaski. Kaníza had evidently heard the boys yesterday telling us the

ILLNESS CALLS A HALT

incarnate deity) conquered Hai Hai Yúl (= Hunza) he took 113
to wife the Princess Búbuli. He had not been long in the 773
country till he saw in a dream Tibet invaded and his earlier queen carried into captivity, so he determined to return and deal with his enemies. Even in the Tibetan versions of the Gesar Saga it is difficult to avoid thinking him an ugly type of hero, a still more unpleasant manifestation of the divine, and the absolute limit in undesirable husbands. Princess Búbuli asked when she might look for his return: "I'll go to-morrow and return yesterday"; he said, "when donkeys grow horns, when millstones grow beards, when the river flows uphill, I shall come back." Lest she should get into trouble during this brief grass-widowhood he seated her on this granite spike with a 200-lb. bag of millet-seed and a cock: "Give him one grain a year, and when the grain is done, I shall return." And there the luckless princess sits, and you can hear her wailing in the winter storm.

The road commands a fine view of the junction of the 133
Nagir with the Hunza River, and the rugged, savage valley 491
which leads to the Nagir capital, tucked away out of sight amongst its sunless mountains near the great Hispar glacier. On our Hunza side the ground falls steeply with fertile bays of terraced fields and groves of apricots, all still in late July laden with their golden fruit. The road winds round various bluffs, following of course the contours of the mountain-side, and you can see several villages below, including Ganesh, clustered on the very edge of the river cliffs. High 644
above the field-terraces on our left we presently espied the 133
white front of the fortress-palace that has looked down over 312
the fields of Hunza for at least six hundred years—surely the most dominating seat of kings in the wide world. It is built on the cliff edge of a projecting promontory that falls perpendicularly—but from the road invisibly—behind it; and behind that again lies the mighty ravine of the Ulter Ber, up which, far out of sight, is the almost inaccessible glacier that supplies all the waters of Hunza, from Áltit (two miles beyond and some hundreds of feet below Báltit) to Aliábád, feeding five or six different aqueducts, including, of course, the Dála.

2: Lorimer T-3 (1920-4; 1934-5) 1939 AV7 Burusho AV7

342 it, exactly over the main store-room below. There is no parapet, only a tiny raised rim to direct the rain into a small gutter-hole, on the rare occasions when there is rain; but it has a fringe of cut thorn bushes arranged round the edge to prevent an enterprising goat jumping across from the next-
351 door roof not many feet away. I didn't, however, go up on to
296 the roof, but on into a larger courtyard where there was a pool in the corner at which their washing is done. They would not dream of polluting the running water by washing themselves or their clothes in it as it flows by; they draw off what they want for these purposes into a separate pond of their own.
351 Then under a large shady tree there was a raised stone plat-
513 form which acts as a "sofa" by day and as a double or treble or quadruple bed by night—for, except in the depth of winter, nobody sleeps indoors. There was another raised platform, with a wall at the back and open in front and sides, roofed in for another sleeping place. It had a railing along under the roof, and over this were hung all sorts of padded quilts, homespun
[136] blankets, sheepskins, etc.—the family bedding. All the bedding is taken out and hung up every day, which helps to account for the complete lack of vermin—which I confess came to us as a happy surprise. In all our year in Hunza we saw only *one* flea, and that, as David said, was emphatically our own!

245 Round the corner from these sleeping places I got into a
312 walled-in shady garden full of fruit trees—apples, mulberries, peaches, apricots, and vines. It is incredible how luxurious mere *shade* is at such a temperature. It wasn't remotely like a garden in our sense. The earth was bare without one blade of grass or green, and was all cut up into little beds round each precious tree, with banks between them, so that the water could be directed to each tree as desired, when it was No. 1's
514 turn to have water at all. In the far corner of the garden was
343 a neat little circular "open-air pulpit." We had seen these pulpits dotted about, but—stupidly—did not at once guess what they were for. Coming straight from Kashmir, where the approach to each homestead is ankle deep in filth, or remembering Arab habits in Iráq, we never expected that we should find in Hunza a people as scrupulously decent as ourselves in

2: Lorimer T-3 (1929–4; 1934–5) 1939 AV7 Buzuzho AV7

600

1. Street scene. Children carrying new-born lambs and kids in their arms to display them to us on our return from Yasin. (*See p.* 282)

PLATE XII

● 312
487

2. The Dila, typical road-cum-watercharnel, flanked by field wall. (*See pp.* 83, 93)

[Facing P. 128]

2: Lorimer T-3 (1920-4; 1934-5) 1939 AV7 Burusho AV7

capriciously from side to side between its beaches, was 500 or 600 feet sheer below, and the great crumbly earthen cliffs on each side were most ominous-looking precipices. There are no paths down them except where a side gorge comes in at intervals. At the spot where I struck the bank there had been a great fall of cliff not long before which had completely carried away a new aqueduct they were—rather too hopefully—trying to engineer across the face of it. If the aqueduct had been successful it would have coaxed some water from the Hasanábád glacier on to a jutting promontory, potentially fertile, but at the moment as bare as the palm of your hand. Six men went over and two of them were killed. Risks like this are all in the day's work in Hunza. People were still prospecting for a more hopeful alignment, but my amateur eyes could see no earthly possibility of getting anything to cling to the friable face of those terrifying cliffs. Meantime I stood well back from the edge! It was pathetic to see gardens and trees within two inches of the treacherous brink and to realize that the farmer on whose land I stood had lost a fertile field or two and half his orchard. I noted that I must go back some day when the light was right and see whether (without committing suicide) I could get a photograph right down the gorge with Raka, of course, rearing herself up in the background. When the light was good it was still very hot in the sun (88° in the shade on an October afternoon), and rocky scrambles over shadeless boulders with a climb of some hundreds of feet to get home were not exactly restful, and I'm not so young!

One autumn morning when I was on the prowl I found a man just about to turn on a small team of cows to thresh a pile of millet heads. He and his children were busy with this in the centre of the floor, while a neighbour and *his* family were beheading another variety at one side. Two or even three neighbours seem amicably to share one threshing floor so as not to waste valuable ground. So I squatted down as usual with my penknife and joined the beheading family and watched the threshing. Only three cows were in the team this time—the millet-heads make a very small heap in comparison with the

2: Lorimer T-3 (1920-4; 1934-5) 1939 AV7 Burusho AV7

Chapter 19

HARVEST THANKSGIVING

THERE are a couple of minor items of the autumn harvest I have omitted to mention. In Aliabád, the widest and most gently sloping bay of the Hunza mountain side, there is for one short stretch of perhaps a mile a patch of ground above the level of possible fields before the steep cliff face begins. Through and above this run the third and fourth of our horizontal watercourses, offshoots from the Berber Channel that waters the higher levels of Báltit and derives also from the great glacier of the Ulter Ber, but takes off much higher up than the Dala. Sufficient water can occasionally be spared from these two channels (which in the main are needed to irrigate high-lying "gardens" of trees) to flood these rocky slopes, which then bring forth that rarest of Hunza products, natural grass. These *toqs*, as they are called, are divided into strips by loose stone walls and used as grazing grounds by whoever leases them. Two or even four families often combine to share a *toq*, and on your walks you will find children of various sizes in charge of a few animals; a small girl may be sitting gravely alone practising embroidery stitches on a strip of calico, a boy may be twisting the string of horse-gut for his catapult bow, a group may be romping together or playing a game like rounders with a home-spun cap for ball, or "horses" where half the players are mounted on the others' backs and the pairs charge each other to a fall, and any rider thrown becomes in turn a horse. When these livelier games begin to pall, a couple will withdraw to the edge of the little channel and scratch a draught-board on a level patch of ground and play with pebbles white and grey as men. The board is formed of triangles whose

2: Lorimer T-3 (1920-4; 1934-5) 1939 AV7 Burusho AV7

a *choga* is being washed, a man's greater strength is called into play—nine yards of wet homespun is no joke. He dips it likewise into cold water, lays it on a stone, and tramples it with his full weight. There is, of course, no fuel to spare for washing clothes or persons in hot water.

From our very first days in Hunza the mills had been a source of interest, and we constantly passed them and peeped in as we traced out all the water-channels on our walks. When the water was in flow (no stream, not even the Dála, was continuously in action in any one stretch) the mills were the centre of social gatherings. The miller and his family would be inside superintending operations, while the women with their babies and their work quietly awaited their turn. They had brought small sacks or bags of grain to be ground and would squat in and round the doorway happily gossiping. Occasionally a man would come along, bent double under a huge sack of 80 lb. or so.

We struck a particularly interesting group one day, where the water was plunging steeply down the hillside and turning three mills in succession, one below the other. David was photographing the busy crowd at the door, and I climbed up a little to join two old women busily spinning among the rocks above. "Father won't want to take pictures of us," they said, in a matter-of-fact tone quite free from bitterness, "we are old and wrinkled." As well as my halting speech permitted, I assured them that older people were our best friends, that we liked faces wrinkled like our own, and that if they would allow it, "Father" would much like their photographs. So I scrambled down the hill again to explain to DL where his next duty lay. He came and engaged the old dames in chat, but it was no easy matter to get a photograph for they were shy and self-conscious beyond the ordinary. The picture turned out at least recognizable, but when it came to delivering their copies we found that their houses were "quite near" of course, but down 500 or 600 feet of highly precipitous gorge, rather more of a rock-climbing feat than we were prepared to tackle in the course of an afternoon's walk. Enquiry revealed, however, that old Pfírúz's son was married to Ustád Nadíro's daughter, so

with. They are the greatest possible contrast to the alert, intelligent Burusho: possibly there is more than sugar in a diet of apricots!

Quite suddenly after the first lovely rush of water the channels went silent again. Not that they were ice-bound, but it seems that the first warmth of the year melts all the recently fallen snow off the top, which gives you your first rush. After that comes a pause before the sun has gathered heat enough to melt the older, hardened snow and make an impression on the glaciers. This arrangement of Nature's suits the peasants well.. The first rush waters their new planted barley and springing wheat; the pause gives them time to clear out all the silt and sand that is cluttering up their channels, and to repair the walls. They find the silt a useful top-dressing for their fields. All the menfolk worked hard to get their irrigation works into trim before the real water flow began. Meantime all the *pferis* near us were empty, and poor Sagi had to go a mile or more to draw water for baths and washing up, in addition to his usual pilgrimage for our drinking water. So we installed an assistant for him.

Among the enlivening sounds of these early Spring days was the tootle-tootle of boys' whistles. At a certain moment when they consider the degree of sap flowing in the willows is right for their purpose, they cut themselves sections of various lengths. With great ingenuity they coax off the bark in great flute-like pipes and make an extraordinary variety of whistles with many notes. The deepest notes are achieved by inserting a finer pipe into a larger one, and thus providing a lining to the latter as it were. The same procedure that yields a whistle will also supply a squirt, a pop-gun, or a pea-shooter, and these various toys diversify the day.

Despite the pleasure which water, work, and sunlight bring, the season of Spring awakes no poet's raptures in the Hunza heart. "Starvation Springtime" would have given Keats an odd title for an Ode. Many weeks before the new barley was ripe for cutting every household round us had already run out of every sort of flour, many also out of potatoes and apricots.

000 the ruins, but the manuscripts threw no light on the matter. So far as they have yet been examined they appear to be comparatively commonplace copies of already well-known sacred writings of latish date. They are now lodged in the Srinagar Museum, which is permanently closed.

Our return to Gilgit coincided (somewhat unfortunately we ungraciously felt) with the Jubilee celebrations and perforce we spent another very pleasant (but time-wasting) holiday with our most hospitable friends the Kirkbrides. It was May 13th before we were able to disentangle ourselves from Gilgit and its seductions and set our faces once more towards Hunza. The very horses seemed to scent that they were heading home and gave us of their best. The weather was now very 137 definitely warming up, and we marched early to avoid the greater heat. Nomal and Chalt provided us as usual with loathsome milk tasting of Tom Cat. This indescribably vile flavour is due to some wild herb that grows in these neighbourhoods at certain seasons. I am not botanist enough to know its name, and it is not a plant of which I covet seeds or slips. It is mercifully unknown in Hunza.

• 312 As we rode through the rich, well-watered string of Nagir villages we were escorted for part of the way by various Nagir princes sent by their father to show us courtesy. Green crops, shady walnut trees and masses of blue iris and wild rose made the road enchanting, its loveliness enhanced a thousandfold by the bleakness and barrenness of the great mountains. I confess I always covet these lovely villages for Hunza, the more so that the Nagirkuts are far more slack and slovenly in their cultivation than "our" people. All the irrigation water, coming straight from the melting glaciers of Rakaposhi, was now milky 576 and unappetizing. The Nagir people, though not actively un-643 civil, never volunteer a greeting as you pass and never throw you a kindly smile even when they speak. We noticed, too—and how it shocked our loyal Hunza folk—that the Nagir princes also were allowed to ride past unsaluted and apparently unregarded. The Mir of Nagir had been pressing in invitations to us to visit him—as soon as he had convinced himself that no great harm seemed to be accruing to Hunza from our presence there.

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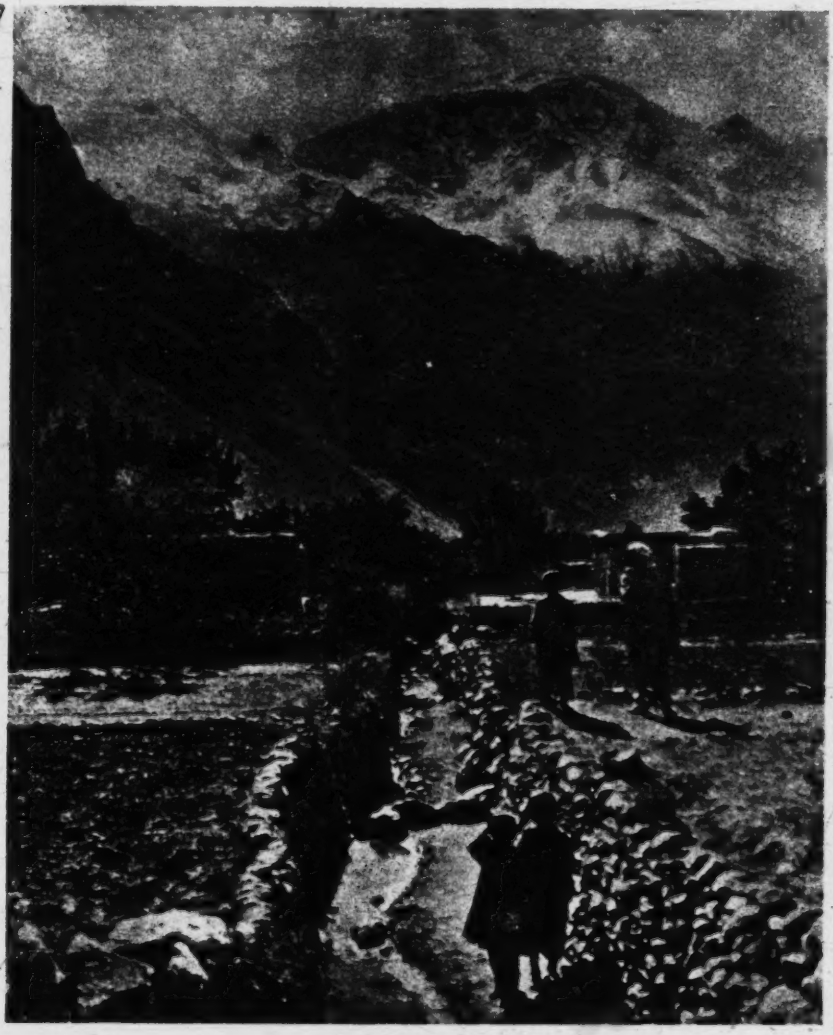

The road-cum-waterchannel on which our nearest neighbours lived.

(*See p.* 114)

PLATE XXI
Facing P. 280

2: Lorimer T-3 (1920-4; 1934-5) 1939 AV7 Burusho AV7

312
857

1. Children watching water-hole (centre) to close it with the mushroom-plug (right) at given signal from father. (*See p.* 94)

PLATE XXIII

142
212

2. Two small Hunza princesses with pet puppy. (*See p.* 246)

3. Khalifa Farághat teaching his son to read the Persian scriptures. (*See p.* 241)

[Facing P. 304]

3: Lorimer L-3 (1920-4; 1934-5) 1935 AV7 Burusho AV7

Among the vast and savage mountains of the Western Karakoram, which are generally devoid of a blade of grass, and of which the surface by falls of cliff and boulders, the slipping of detritus, and the downpouring of mud-floods, is kept in a constantly raw and unstable state, nature has made it possible for a small population to maintain itself, in the sweat of its brow, by agriculture and the pasturing of small cattle.

Terraces, apparently the remains of glacial deposits, supplemented it may be by downpourings from the mountain sides, have been left here and there along the sides of the valleys of the main rivers, at a height usually of some hundreds of feet above their stony beds. Where water for irrigation can be obtained from side-ravines these tracts can be cultivated. Without irrigation no cultivation is possible. There are no rain-watered cereal crops and water cannot be raised from the main river. The surface of these terraces is not flat, but slopes down at every kind of angle from the hillsides till the terraces end in abrupt earth-cliffs descending to the river beds. As the ground has to be irrigated it also has to be more or less levelled, otherwise all the soil would soon be washed away. This is accomplished by constructing terraced fields, the lower edges of which are supported by revetting walls built up of the rounded stones available in the diluvium. This revetting is highly skilled work, and is beautifully carried out, and maintained in perfect repair by the Hunzukuts. The Nagirkuts seem on the whole to be less strenuous workers and less tidy-minded cultivators.

There remains the task of constructing channels to bring water from where it is available, often miles away. These channels are designed with precision and executed with great resource and ingenuity, often being carried on revetted or galleried aqueducts across cliff faces. Having made your land and brought your water, it still remains to elaborate a system of distributing the water among the various communities or individuals entitled to a share of it.

Pressure of population in recent years has led to constant endeavours to devise means of providing water supplies for tracts of waterless but cultivable land. Where land and water have been

3: Lorimer L-3 (1920-4; 1934-5) 1935 AV7 Burusho AV7

312 423 And so life seems to go on. Even water rights, the turning of the carefully-husbanded water on to the land of the various groups in succession, appear to be exercised, according to the recognised scheme, by those concerned without recrimination. But at this season water is plentiful.

562 884 Women here hold a position of freedom and respect rare in the East. Young and old they move freely about, unveiled and unaccompanied. They mingle and converse quite naturally and unselfconsciously with men. No doubt everyone knows everyone else and many are related. Young marriageable girls are as free and open-faced as the married women.

609 123 To the stranger within their gates, at any rate to the Sāhib and Mīm sāhiba, strayed out of another world, everyone is courteous and cordial, welcoming approach and questions, anxious to give information, amused at and appreciative of stumbling efforts to speak their difficult language, inviting them to their work parties in their fields or their leisure gatherings in their shady gardens. Always there is perfectly natural, self-respecting courtesy and good feeling, never that servility, false familiarity, self-assertiveness or aggressiveness characteristic of those who suffer from a sense of real or imagined inferiority.

This may appear a roseate, even idyllic picture, and no doubt there must be darker patches on the reverse side of it, but these do not appear to dim the general effect.

184 157 So much for the Hunzukuts Burusho. Of their Nagir neighbours I can say little. In casual contacts I have found them also friendly and courteous. The general impression is that they are not so actively cheerful as the Hunzukuts.

000 We may now turn our attention to the speakers of Werchikwār (Wərčikwar). That language is spoken only in the Wershigūm valley, known as the Yasīn district from the name of the village adjoining the administrative headquarters. The linguistic situation existing in Yasīn is shown in the following table:

4: Lorimer L-3 (1920-4; 1934-5) 1935 AV7 Burusho AV7

which interlaced (over the middle of the stream). He crossed the vine to the other side. When he had crossed and gone towards his grandfather's house on his father's land, Sīng was lying down and there came the sound of his snoring. He knew that he was lying down. When he approached near, Sīng's eyes were open, and he went up to him and killed him as he slept. Having slaughtered him he left his head there and concealed himself. 537X

Presently Sīng's sisters and the people of his house heard (of his death), and when they looked they found that someone had murdered him. They cursed the people of Hīndi. All marvelled saying: "Who has murdered him?" Thereupon the son of Daltas Manūko, son of Sīng, came out (from his hiding place): "O aunts," said he, "it is I who have slain grandfather. He had killed my father's two brothers, and my father, fleeing from death (at his hands) had escaped (*or*, crossed over) to Pisan. There he married my mother and I was born. The people of Pisan slew my father. I have now come and killed Sīng because he had without justification killed his sons. In revenge for that I have killed him."

Having said this, he settled down in the place of Sīng in Hīndi and abode there exercising lordship.

Formerly his grandfather had put three "chuk" of millet in the hopper of the mill and had fixed the distribution of the water (supply) for the people on that basis. Now the son of Daltas Manūko, son of Sīng, abandoned that system and allotted the water on a basis of days. Up to the present time they divide up the days and allot the water according to that system of his. 539X 312

They say that this Sīng was of the Hamachātīng tribe. In the time of the son of Daltas Manūko, son of Sīng, the Thams of Hunza came with an army to Hīndi and took possession of it. It is said that they then slew the son of Daltas Manūko, son of Sīng. 539X

4: Lorimer L-3 (1920-4; 1934-5) 1935 AV7 Burusho AV7

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No. XLII.

The Distribution of the Spring Water Supply in the Bāltīt Region.

The custom in regard to distributing the water in spring-time: The people of Ganish, of Altīt and of Ali.ābād, these three communities, have equal shares in the water of the Ulter Nullah from the (time of) ploughing till the second watering.

From the time that the Ulter water begins to flow the people of Bāltīt stop a little of the Berber water It is the custom, from the beginning of Spring, to turn the water on to Kerimābād for the Tham, through the regulator.

The snow-water and the spring-water of Būlulo is shared by the people of Bāltīt and of Haiderābād. First, at the commencement of the month of Hūt they release the water to the Haiderabadkuts for the barley sowing. Having released the water for the sowing, they (then) direct it to Bāltīt. After supplying water for the Bāltīt

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4 *ʊʁaʂ* — The exact sense is here also doubtful, lit. 'to place' or perhaps 'to turn on to', but it can also mean 'to keep' which might give the sense 'to retain for Kerimabad'.

5 *-kutsor . . . heraŋ bila* — the force of *heraŋ* must here be something like: "property common to both".

7 *ho hərki.e tril* — i. e. when the Haiderabadkuts have had what they required the water is given to Baltit.

The subject of *dewćan* can hardly be the Haiderabadkuts as Haiderabad is lower down on the course of the channel than Baltit.

The difference in level is not sufficient to make a very appreciable difference in temperature, but there must be something in the situation which makes the agricultural season slightly earlier in Haiderabad than in Baltit, otherwise Haiderabad, being the less important place, would not get the first turn of the water.

4: Lorimer L-3 (1920-4; 1934-5) 1935 AV7 Burusho AV7

sowing, they give it to the Haiderābādkuts for the second watering; when the second watering is done they despatch the water for the Bāltīt second watering.

When the Haiderābādkuts have used the water for seven days, the Bāltīkuts use it for fifteen days, then when the Haiderābādkuts have used it for fifteen days the Bāltīt people use it for a month. This custom has been in force from olden times.

The Berber water (supply) is famous in Hunza. Wazīr Asadullah Bèg constructed the Berbér water channel in the time of Shah Ghazanfer. So long as the Berber was not in existence there was great scarcity of water in Hunza. To get drinking water the women used to go to Herchē and fetch it. Hunza was made habitable by the Bāltīt water.

The Hamachāting constructed the Hamachi water channel to Ganish and the Altītkuts took a channel off from the Ulter Nullah. Shāh Salim Khān had constructed a channel for Aliābād from Herchē and bringing it along had stopped it at the Kherum Bat. He had been unable to carry it beyond that.

For some reason he had dismissed Wazīr Pūno from the Wazīrship. Pūno was living at his own home. One day, taking the Khurukuts with him he went by night and made them dig behind the Kherum Bat. Making them play on drums he got them to carry the channel through. Shāh Salim Khān, being pleased at this, gave him the Wazīrship again.

Asadullah Bèg constructed the Murkū channel. He also made the Murtazā.abād channel and the Khudā.abād channel.

Wazīr Asadullah Bèg had also laid out the trace of the Mōrē Dās channel. Mīr Muhammad Nazīm Khān carried it out on that trace.

16 *dovgusimi* — I have taken here as being Causative, as it is glossed Hindustani (infin.) "*nikalwana*", but the verb seems ordinarily to be a simple transitive with the same meaning as *diwas*.

burnt. *guʷɣi ɣoluʷʃ* may your beard be burnt! (a curse). *gopiʷišo ɯɣolʃʌs* may your hair be burnt! *huʷn iɣˈolimi* the wood was burnt. *ɣolˈʌs gomʌnʃ* may you be burnt (a curse). *(i)ɣuʷlom ʃʌpik jaʷr ayau* don't give me burnt bread. *ɯɣuʷlomišo ʃʌpik* burnt bread (pl.).

2. To burn as the result of extreme cold, be frostbitten (?). — *aʷrɨŋ ɣoluʷči, ɣoluʷmi* my hand will be, was, frostbitten (described as becoming stiff and numb).

(Cp. **-ʌsqolʌs*).

ɣolčin, golčin, qolčin pl. *ɣolčiyo* hm. head-cook (of rajas etc. only), H. *xʌnsaʷmaʷn*. 644

M. M. P. supplies the following note: '"Superintendent of the Kitchen of the Tham". There are two *ɣolčin*, one the superintendent who has charge of the flour for the kitchen and superintends the baking of bread by women; the other is a cook who cooks *sălan*'. (= meat and vegetable dishes?). 60.20 ff., 340.9,12.

(Cp. Sh. *qolčin*, land-steward (?). Kho. *ɣolčiʷn*, official in charge of grain).

ɣolk -ʌnts x underground water-tank, cistern. — *ɣolk ɯʌši.ʌs* to construct a tank. *majuʷr yaʷr hʌn ɣolkʌn bim* under the weeping-willow was a tank, pond. 262.17 ff. 312

As far as I have seen there are no wells in Hunza-Nagir fed by subsurface springs. The *ɣolk* is a pit dug in the ground and filled periodically from an irrigation channel. It is roofed over a little above ground-level, one side being left open; but in this story the *ɣolk* cannot have been covered over.

1856

000 1. *hʌndɔr'ɛs, hʌnd'ɔrɪs* pl. *hʌnd'ɔrɪšo, -ɪšo* x small cross timbers of roof.

(Cp. *hʌnʔ*. Also perhaps the latter part of Kho. *kʌnjʌr'ɛs = khʌnj + dʌrɛs*, piece of timber laid along top of wall of house).

2. *hʌnd'ʌrɪs*, pl. *hʌnd'ʌrɪšo*, x callosity (on hand or foot).

hʌnti, hʌnti, v. s.v. *hʌnčo*.

h'ʌnti.ʊlʌm, hʌnti.ʊlʌm, N. *hʌntɪlʌm*, ninth.

hʌnts, pl. *hʌnzɛ*, N. *hʌntsɪšo hʌntsaɪnts*, x arrow, H. *tɪr*, (IUB, also bullet, H. *goli*). — *hʌntsʌtɛ dɛlɪmi* he shot him with an arrow. 146.11. *gusɔ hʌnts čʌp sčʌm kɪ hʌntsɪtsɛ dʌnɪmi kɛ* . . . if I shoot this arrow and if it catches this arrow . . . 156.6. *hʌntsɛ tɔrkoŋ* the feathers of an arrow. 156.8. *ʒʌmɛr hʌnts nyʌwɛšɪn nʊtʌsk bɪtʌmi* fitting an arrow to his bow and drawing it he shot. 148.16. Cp. 152.13. *hʌnts d'ɛrgʊsɪmi* he pulled out the arrow. 150.20, 154.9. Cp. 260.11 ff., Prov. 32.

hʊ.ɔr, (*hʊyɔrʔ*), wool-bearing animal, sheep. — *hʊ.ɔr bʌʃ* sheepskin.

hʊ.ɔrkʊm, (*hʊyɔrkʊmʔ*), pertaining to wool-bearing animal. — *hʊ.ɔrkʊm bʌʃ, čhʌp* sheep's skin, flesh.

(*hʊpʊrpɔʔ*) v. *hʊrhɔrpɔ*.

• 312 *hʊr, -ʌnts*, N. *hʊr, -ɑrɪnts*, x conduit for water, water-shoot (made of hollowed-out log or piece of wood).

Used also of aqueduct channel and mill-race (both made of hollowed log), gutter (for draining roof).

hɔrʊlts hʊr, or, *tɛšɪs hʊr* runnel for draining rainwater off roof. *hɪrɛks hʊr* bottom piece of frame of comb of loom. *yʊɪ.ɪŋɛ hʊrɛ xʌ gʊrmɔ* she threw them down the mill-race. 206.10,

2086

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(Cp.? · Sh. *khur*, GB. *khur*, water-shoot made of hollowed log. wooden aqueduct).

hurgas, hurgas thick, stout (of cloth, leather), H. *motā ćīz*, Sh. *phāsoro*. — *hurgas gap, baṭ* thick hide, leather. *pṭilam, paćī, hurgas bila* the woollen homespun, the cotton cloth, is thick.

hurgo, hurgo -ŋ *y* ascent, slope up: uphill, H. *čhaṛhāī*. — *tsan yaṭ ns, buṭ hurgo bila* it is a very steep ascent straight up. *ḍaŋ* (or, *buṭ*) *hurgo bila* it is a stiff ascent. *N. ine hir hurgo nīmi* the man went uphill.

hurginas IUB stream, current, wave, H. *dhārā ka dhaṛ, mauj*.

hurgo, N. *horogo*, *y* perspiration, sweat. — *hurgo di bila* sweat has come, i.e. I etc. have begun to sweat.

hurṭ, -ants x stack (of cut crops).

hurt -eŋ *y* revetting wall (of terraced field). (Cp. Sh. *hurć*).

hurtshil the water that flows off at the lower side of a field when it is irrigated. (= *hurt* + *tshil*? Cp. Sh. *hē-tsol*, muddy water coming off irrigated field).

hurućaiyas to sit, sit down, abide, remain, settle down; become pregnant.

A parallel form to *hurutas* q.v., used only with plur. subjects. V. BSOS VIII, 1936, p. 628.

Forms recorded:

Pres. 3rd. pl. *hurućaćun*. QUB.

Pret. 3rd. pl. *hurućaman*, -*aman*, also -*uman* (the vowel not being stressed is not very distinct). V. pp. 10, 18, 20, 32, 32, 36, 46, 90, 96, 122, 238, 294.

Perf. 3rd. pl. = Present. *oltalik hurućo bun* both are sitting. 30.13. *man hurućo bun ki* whatever women are pregnant. 88.25. *kole bosir*

209a

7:Tobe C,T-3 (1959)1960 AV7 Burusho AV7
Hunza

the past year the total collected from fines imposed by me upon the citizens of Hunza totaled less than 200 rupees. You know that my people do not have much money. There is no way or means of earning money—except by the few. We do not require money in order to live in Hunza. Further, the full amount that was collected in this manner was used in the maintenance of the irrigation system."

I waved my hand and said, "I only asked. I didn't think it was true, but I've read so many tales about Hunza in which ridiculous and fantastic statements are made without any justification or background."

"A few years ago," I went on, "two of the most influential and widely circulated magazines in the United States published an article by a famed and capable couple of writers—man and wife. I know they visited Hunza on two occasions because I saw their names in your guest book. Now the story they told and which both of these magazines published stated that it was a custom in Hunza for the mother-in-law to go and live with a newly married couple and remain with them on their honeymoon to teach them the ways of life. You explained that this was the reason why Hunzan marriages were so successful and there was seldom, if ever, a divorce.

"Before asking you to clarify this, I just want to tell you that I read this story and when I came to this specific part, I could hardly believe my eyes. But, as I have learned, there are many strange customs followed by different people throughout the world and of course, this could be absolutely true. But it certainly is strange and weird sounding to me anyway. So tell me, is that story true? Is it the custom of the people of Hunza to have the mother-in-law stay with the newly married couple during their honeymoon?"

131 Hunza is a country that lies along the Hunza River from Secunderabad to the Chinese border, a distance of somewhere around 200 miles, but no one has ever actually measured it. At the narrowest point it is less than half a mile wide. At its broadest, it is not quite two miles. Usually the only piece of flat land in a village [133] [134] is the polo field. Good, rich, deep soil as Westerners know it is absolutely unknown in Hunza.

311 Whenever a house is built here, they seldom ever use [361] a piece of fertile soil or soil of any kind. They usually erect it on rock or on a steep hillside where that piece of land could not have been used for agriculture anyway.

[241] Practically every bit of farm land is terraced. It can be said, it is actually cut out of the rocks of the mountainside which is the north bank of the Hunza River.

[134] Of the total length of 200 miles, only a small fraction is at all arable. Most of it is solid rock or terrain so steep that horticulture of any nature is impossible.

312 Rainfall is scanty. They cannot depend upon it at all [132] for crops. In order to get sufficient water, hand built and similarly maintained conduits bring water down [241] from glaciers. These conduits are carefully erected and trained to run alongside the villages where the water can be trapped to flow where desired and used to irrigate their lands, also for drinking and all other necessary purposes.

There are four main conduits in Hunza and they are as follows:

Murku—This is at the highest level of all the aqueducts and carries the most water.

Barbar—Supplies the Baltit-Altit area.

Dala—This is the longest—extends as far as Aliabad. Supplies Kerimabad.

Hamachi—The smallest which runs as far as the tiny village Ganesh, located on a cliff's edge.

7:Tobe C,T-3 (1959)1960 AV7 Burusho AV7
Hunza

Water rights are regulated by law and a man can use the water from the conduit that passes his land at certain definitely established periods. The flow or shut-off is controlled by placing a large stone or rock at the opening of the channel into the individual's waterway. It may sound a bit baffling to the average individual, but upon viewing it and examining it, it is easy to understand and, what's more important, it is simple and practical.

Nowhere did I see these waterways covered or encased in pipes—although they did in many places run under the roadway.

As their water supply is glacier-fed, there is never any danger of a supply failing . . . at least, not in the imminent future. However, in cloudy periods the flow slackens and an extended cloudy period causes a severe water shortage.

Lest you get the idea that these conduits or waterways are a simple matter, I want to assure you that they are a marvel of engineering. Further, when you consider that the first one was built about 1860 without any man made tools or iron or steel, you can then believe what a difficult and gigantic undertaking it was. It is a monument to their industry, intelligence and foresight. At least now, they have iron picks with which to dig, rather than having to use ibex horns.

Here I want to mention very definitely that the same type of waterway exists on the other side of the river . . . that is, in Nagir territory.

They do not, in any sense of the word, have orchards as we know orchards in the West, because they don't have a piece of land large enough or flat enough to compare with what we know as an orchard. In the West orchard sites are usually selected with the premeditated view of providing excellent drainage. There-

7:Tobe C.T-3 (1959)1960 AV7 Burusho AV7
Hunza

know that the child will be given a fine upbringing.

It is to be expected that the milk parents will be given much consideration and favors from the Mir's household and family . . . and the Mir has and still does provide better than average homes or residences for these selected people.

In Hunza at the present time, the Mir has built a row or unit of bungalows for these milk parents and they are given food and necessities from the royal kitchen.

I have tried to find some connection of this practice with other nations or peoples. So far my search has been unsuccesful in this regard.

Death is not the serious thing with the people of Hunza that it is with most other peoples throughout the world. That does not mean that there is no sadness and mourning, but it does not take on the same scope and seriousness that it does in the West. This is primarily due to the religion and beliefs of the people. Being Mohammedans, they believe in predestination . . . "So Allah wills."

Seldom are graves of departed kinfolk visited—nor are flowers laid upon them. In fact, very little maintenance is ever carried out on graves. Visits to the graves or graveyards are definitely not encouraged. The dead are revered, but visiting the grave of the departed is not really the accepted thing in Hunza.

The dead are often commemorated by having roadside lean-tos or "baldies," as they call them, erected for them . . . where a man can stop and find a bit of shelter during a storm, or rest his pack or load. They also build "jhurks" or water holes to serve the same purpose. Women are seldom commemorated in this manner. The best that a woman can hope to get is a rock pile erected in her memory.

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7:Tobe C, T-3 (1959)1960 AV7 Burusho AV7
Hunza

Both the irrigation water which they use on their fields and their drinking water come from the Ultar Glacier. Therefore, their entire water supply is glacial. 312

Their entire economy is dependent upon their agriculture and everything that is taken from the soil is religiously returned to the soil. Chemical fertilizers or chemical sprays of any type are unknown to the people. It may be possible that the Mir has used sprays in his palace grounds. He might have brought them with him from his visits abroad, but I saw none and, to the best of my knowledge and belief, none are used. I saw no insect infestation of any kind or type through my entire travels and investigations. In Gilgit I did see insect injury in a garden and it was apparent to me that the soil of Hunza was in balance and therefore it produced food that was balanced. Therefore, it is understandable, the people of Hunza are healthy! 241 [433]

The food of the people of Hunza is in the main, raw food. It is neither dissected nor desiccated, but is eaten in the whole. The only exception that I could find to this rule was in their milk. When they made butter, they drank the remains or the buttermilk. Of course, in due time, they ate the butter. 262

All children born in Hunza are breast fed for at least two years. Male children are often breast fed until they are 3 years old. 853

I do not intend to stress any one factor of the points mentioned above. I am submitting them to you for your consideration and study. 001

It is, however, my belief that their soil and location does not lend itself to mechanization and therefore their good health should continue. If they could mechanize, then they would not get the needed beneficial exercise which, as you can gather, is one of the important contributors to their good health and longevity. 241 164

7:Tobe C,T-3 (1959)1960 AV7 Burusho AV7
Hunza

tilizers are used on their lands.

(8) All children in Hunza are breast fed. There is no specific prenatal care, and the good health of the mother is passed on to the infant . . . and the breast feeding gets the child off to a good start.

(9) All fruits and vegetables that are dried for storing have been exposed to the sun and air. No foreign substances are added or treatments used.

(10) Native herbs are used extensively . . . both as seasoning and as food.

(11) Glacial waters are the only waters used both for drinking and irrigation purposes. These glacial waters definitely contain many valuable minerals and nutrients, as revealed by laboratory tests.

(12) Apricot kernel oil is the most important source of fat. It is used in cooking as well as for salads. No solvents or extreme heat is used to extract the apricot oil.

(13) Natural whole grains are used broadly. There is no fragmentization in Hunza. While they do bake a bread, their chief form of bread is an unleavened type which they call chapatties. They are composed of whole ground grain made into a dough and rolled very thin. Then they are heated or baked slightly.

(14) Hunzans are light eaters. Their diet is comparatively meager.

There is no doubt that, if any human being were to follow the health rules of the people of Hunza, he could regain or maintain health. There is no magic formula connected with this set of rules. They are simple and to the point. In fact, they are so simple that most people will doubt their value. To these people I would say, "All of the great things in life—the important things and things of value—are invariably simple!"

In Hunza the following established Western health

7:Tobe C, T-3 (1959)1960 AV7 Burusho AV7
Hunza

would like to mention that since 1950 here is a list of all the people who were allowed into Hunza from the outside world: Franc and Jean Shore, April, 1952; Lowell Thomas, Jr. in December, 1954; Benjamin Ruhe in July, 1956; Barbara Mons, May, 1956; Dr. Allen Banik, July, 1958; and John Tobe and Cecil Brunton in July, 1959.

I've a letter here from the Embassy of Pakistan, Washington, D. C.:

"Dear Dr. Keller,

"Please refer to your letter of September 29, 1959, regarding your request to visit Hunza.

"The Government of Pakistan have regretted their inability to grant permission for your visit to this area. We would like to mention that we have received a number of similar requests from other individuals and we have not been able to comply with those requests.

"We have been informed by Dr. Francis Pottenger of Monrovia, California, that he and Dr. William Albrecht of the University of Missouri, also planned to accompany you on your proposed visit. We would appreciate it if you could kindly convey our regrets to Dr. Albrecht. We are writing to Dr. Pottenger ourselves.

"Yours sincerely,

A. Fatch, Second Secretary"

This should establish clearly, once and for all, whether or not it is easy to get into Hunza.

Court fines go to Mir's treasury. This statement was made by one of the writers on Hunza and when brought to the Mir's attention by me, it was vigorously denied.

Any revenue obtained in this manner goes to the state and helps maintain the canals and aqueduct systems. Further, the total obtained from fines during a year would not exceed 200 rupees, about $40.00.

8: Clark N-5 (1948-1951)1963
AV7 Burusho AV7
Hunza

[P43-A]

SCENE MORE TYPICAL of neighboring Gilgit than of Hunza is this one showing boys at a community fountain. Until a short time ago, little if any pipe had been available in Hunza. Water, called "glacial milk," comes from ice sheets.

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4: Durand G-3 (1888-93) 1900 AV1 Kashmir
Burush. AV7

of bread or grain, but I was told that this was not the case. What does happen here, and throughout the region of the Eastern Hindu-Kush, is that the fruit crops are so prolific that the people naturally live largely on them in summer. Even the animals take to a fruit diet, and you see donkeys, cows, and goats eating the fallen mulberries. The very dogs feed on them, and our fox-terriers took to the fruit *régime* most kindly, and became quite connoisseurs in the different kinds of mulberry, preferring the "Shahtut," the king mulberry, a large luscious purple fruit, to all others.

The great water channel referred to before deserves passing mention. Its head waters are some half a mile up the ravine, on the edge of which Hunza stands, a few hundred feet below the end of the glacier which feeds it. For the whole of this half mile the water channel is a monument of patient labour, and of the clever adaption of the rudest means to the most important end. It is carried across the face of a cliff, in some places of sheer rock, in others of hard conglomerate. Sometimes it runs along the top of a built-up wall thirty or forty feet high, at others through carefully excavated channels in the conglomerate which avoid the difficulties of a sharp corner by tunnelling through it. Where the face of the rock is perpendicular, and its foot washed by the torrent is unsuitable for the foundations of a retaining wall, the water flows through timber troughs, supported by wooden brackets adroitly fixed into the cliff. I did not measure the output, but, roughly, the channel must have at its widest a section of

4a Durand G-8 (1888-93) 1900 AV1 Kashmir
Durush AV7

four and a half feet wide by one foot deep, which means a considerable flow of water. On this channel the cultivation of Hunza proper entirely depends; should it fail, starvation stares the people in the face. It is not surprising, therefore, that the greatest care should be expended on its preservation. But what is wonderful is the excellence of the result arrived at. It must be remembered that the people have no proper tools, no crowbars and dynamite to assist them. A tiny pick of soft iron, which looks like a child's garden tool, shovels fashioned out of wood, and a few poles as levers, are all that they have to work with. The use of mortar is unknown; all their walls are of dry masonry. Yet with all these disadvantages, with nothing but their eye as a guide to levels, they have carried this great irrigation channel for six miles, and turned an arid desert into a garden. For the most part it is true it runs along the side of a gently sloping mountain, but it also crosses many deep and perpendicular-sided ravines, and encounters masses of rock which have to be circumvented. It is a splendid work, and I admired it more every time I walked along it.

The Thum was too unwell with fever to return my visit, and his Wazir came in his stead. Robertson went up to see the Chief, and prescribed for him, with the result that the descendant of Alexander, as he considered and called himself, got into a state of abject terror, thought his last hour was come, and refused to take the second dose which was the natural sequence of the first. Robertson reported that he was a coward, that he had literally